

Claims

1. A tripod head, in particular a camera tripod head, comprising:
 - a base member (4, 20, 21),
 - a tiltable assembly (5), which, on the one hand, is connected to said base member (4, 20, 21) so as to be rotatable about a tilt axis (N) and to which, on the other hand, a mounting, particularly a camera mounting (3), is securely attachable,
 - a means for compensating a tilt moment (M_N) that occurs during the tilt movement, said means having at least one energy-storing member (17) that is freely supported on said base member (4),wherein
said means for compensating the tilt moment has a carrier assembly (22, 24, 25, 26) that is attached at a position some distance away from said tilt axis (N) on said tiltable assembly (5) and which acts on said energy-storing member (17) when said mounting tilts and as a result said energy-storing member (17) exerts, via said carrier assembly, an essentially sinusoidal return moment (M) on said tiltable assembly and thus on said mounting, and said carrier assembly has at least one carrier (26) that is movable with said tiltable assembly (5) around said tilt axis (N) and has at least one pulling member (9) that interacts with said carrier (26) and said energy-storing member (17).
2. A tripod head according to claim 1, characterized in that said energy-storing member is a pressure spring (17) or a tension spring or a torsion spring or a spiral spring.
3. A tripod head according to claim 1 or 2, characterized in that said pulling member (9) is deflected or turned back

at least once during the course between said carrier and energy-storing member.

4. A tripod head according to claims 1, 2 and 3, characterized in that said pulling member (9) is deflected once over the course between said carrier (26) and the one end of at least one pressure spring (17), and the assignment from said carrier (26) to said tilt axis (N), the pre-tension of said pressure spring (17), and the distance r_b between said tilt axis (N) and the deflection point (19) are chosen such that the counteracting compensating moment or return moment (M) satisfies the formula

$$M = \left(1 + \frac{r_{s,\max} - r_b + L_{vw,\min}}{\sqrt{r_b^2 + r_s^2} - 2 \cdot r_b \cdot r_s \cdot \cos \alpha} \right) \cdot c \cdot r_b \cdot r_s \cdot \sin \alpha$$

with the aim that the value of the fraction between brackets, i.e. $(r_{s,\max} - r_b + L_{vw,\min})$ is equal to zero or close to zero, or the value between brackets is 1 or as far as possible close to 1, in which formula

$r_{s,\max}$	=	maximum distance between tilt axis and carrier
r_s	=	distance between tilt axis and carrier
r_b	=	distance between the tilt axis and the pulling member's point of exit from the deflection point
$L_{vw,\min}$	=	minimum spring pre-tension
c	=	spring rate of individual pressure spring
α	=	respective tilt angle

5. A tripod head according to at least one of claims 1 to 4, characterized in that a set of pressure springs (17) is provided.

6. A tripod head according to at least one of claims 1 to 5, characterized in that said at least one pressure spring (17) is a helical spring.
7. A tripod head according to at least one of claims 1 to 6, characterized in that said at least one pressure spring (17) is aligned essentially parallel to said tilt axis (N) and can be compressed in this direction.
8. A tripod head according to at least one of claims 1 to 7, characterized in that said at least one pressure spring (17) is clamped between a stationary support means (18) and a movable support means (16), which is movable particularly in the direction of said tilt axis (N).
9. A tripod head according to at least one of claims 1 to 8, characterized in that the one end (14) of said pulling member (9) is connected to said movable support means (16) and the other end (8) is connected to said carrier (26).
10. A tripod head according to at least one of claims 1 to 9, characterized in that said deflection point (13) located between said ends (8, 14) of said pulling member (9) is formed by a deflector roll (10) which is rotatable around its own roll shaft (11).
11. A tripod head according to claim 10, characterized in that said deflector roll (10) is mounted so as to be pivotable essentially around an axis that passes through a site (19) where said pulling member (9), coming from said carrier (26) after deflection, leaves said deflector roll (10) in the direction of said movable support means (16).
12. A tripod head according to at least one of claims 1 to 11, characterized in that said pulling member (9), starting from said carrier (26), runs essentially perpendicular to said tilt axis (N) toward said

deflection point (13) and, after deflection, runs essentially parallel to said tilt axis (N) to said movable support means (16).

13. A tripod head according to claim 12, characterized in that said one end (14) of said pulling member is connected to said movable support means (16), passes from there, via said deflection point (13), to said carrier (26), where said pulling member (9) is connected to said carrier (26), and from there returns, via said deflection point (13), back to said movable support means (16).
14. A tripod head according to claim 13, characterized in that said pulling member (9) is designed as a continuous cable.
15. A tripod head according to at least one of claims 1 to 14, characterized in that at least two pulling members (9) are disposed symmetrically relative to said tilt axis (N).
16. A tripod head according to at least one of claims 1 to 14, characterized in that when there is a symmetrical arrangement on both sides of said tilt axis (N), a continuous pulling member (9) is provided, said pulling member being of a continuous design in the region of said carriers (26).
17. A tripod head according to claim 16, characterized in that a carrier assembly (7) is formed from a deflection combination that each comprises two deflection points (13a, 13b).
18. A tripod head according to claim 17, characterized in that said deflection points (13a, 13b) are formed by a deflector roll, whereby at said two deflection points, one deflection point is formed by a fixed deflector roll (13b) and the other deflection point is formed by a pivotable deflector roll (13a).

19. A tripod head according to at least one of claims 1 to 18, characterized in that said at least one carrier (26) is rotatable around a shaft that is parallel to said tilt axis (N).
20. A tripod head according to at least one of claims 1 to 19, characterized in that said at least one carrier (26) is perpendicular to said tilt axis (N), preferably continuous, movable in terms of location and fixable in the respective position.
21. A tripod head according to claim 13, characterized in that said pulling member (9) passes through or loops around said carrier (26).
22. A tripod head according to at least one of claims 1 to 15 and 19, 20, characterized in that said pulling member (9) is clamped within said carrier (26).
23. A tripod head according to at least one of claims 1 to 22, characterized in that said pulling member (9) is a cable.
24. A tripod head according to claim 23, characterized in that said cable is bendable in a flexural manner.
25. A tripod head according to at least one of claims 1 to 24, characterized in that said pulling member (9) is inextendible.
26. A tripod head according to claim 25, characterized in that said pulling member (9) is prestretched.
27. A tripod head according to at least one of claims 23 to 26, characterized in that said cable is a wire or a laid or braided steel or aramid-fiber cable.
28. A tripod head according to at least one of claims 1 to 27, characterized in that at least one groove (12) is

provided within said deflector roll (10) for partly receiving and guiding said pulling member (9).

29. A tripod head according to at least one of claims 1 to 28, characterized in that said carrier (26) is a carrier pin aligned parallel to said tilt axis (N).